

October 23, 2005

Stephen B. Elliott
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Allen, Texas 75013

Commissioner for Patents
Attention : Michael Kahelin
Art Unit 3762
P.O. Box 1450
Alexandria, VA 22313-1450

Reference : Application # 10/829,079

Dear Michael,

I am writing in response to your office action of October 8th, 2005.

Thank you very much for your careful consideration of the referenced patent application. I acknowledge that the claims require the attention of a qualified patent attorney.

But, before I enlist an attorney to assist me in rewriting the claims, I would like to resolve the matter of conflict with Vaschillo, et al. (5,997,482).

Regarding conflict with Vaschillo, I respectfully believe your conclusion to be in error. I offer these arguments.

- 1) The fundamental intent of the Vaschillo patent and the Elliott patent are different. The premise of the Vaschillo patent is to identify the frequency of resonance and to facilitate breathing at that frequency for therapeutic purposes, specifically to elicit the state of *relaxation*. This is clearly stated numerous times throughout the Vaschillo patent.

The premise of the Elliott patent is to synchronize breathing and motion with the heart rate variability cycle for purposes of exercise. This is also clearly stated numerous times throughout the Elliott patent.

I understand that this has little bearing on whether or not the inventions are in conflict but it does point out that the intent is fundamentally different as I believe is clearly reflected in the respective specifications and associated claims.

- 2) The processes of Vaschillo and Elliott are also fundamentally different. This difference is made clear in the attached figure. In essence, the Vaschillo patent employs a reference signal with which the user synchronizes their breathing, after which heartrate and breathing rhythms are monitored for phase alignment with each other. Breathing is facilitated at the moment of alignment, i.e. resonance.

The Elliott patent specifies monitoring of heart rate and synchronizing the breathing cycle and body movement with the heart rate. Breathing is not monitored whatsoever. Nor is the alignment between heart and breathing rhythms assessed whatsoever.

Alternatively, the Elliott patent specifies generating a tempo based on heart rate as monitored, and synchronizing the breathing cycle and body movement with this tempo.

These processes have fundamentally different outcomes. Vaschillo facilitates "resonance". Elliott facilitates "synchrony" at varying heartbeat rates during exercise.

- 3) From reading the Vaschillo patent, there is no evidence whatsoever that Elliott claims 1-6 and 9-18 are anticipated by

Vaschillo et al. It is stated numerous times throughout the Vaschillo patent that the focus of the invention is on accessing a therapeutic state of self management and *relaxation*.

Biologically, resonance exists at only one frequency, that of homeostasis, i.e. rest or semi-activity. Not exercise. For this reason, the term “resonance” is never used in the Elliott patent. Consequently, Vaschillo could not have intended “resonance during exercise”.

Further evidence of Vaschillo’s intent is made clear in claim 1(b), where “a sinusoidal reference signal with a first frequency lying a frequency range of .01 to .14 Hz.” is specified. .01 Hz. and .14 Hz. result in periods of 100 seconds and 7.14 seconds, respectively. As resonance requires that heart and breathing rhythms be synchronized, this makes very clear that the breathing frequencies he is targeting range from:

- $[60 \text{ seconds}/(1/.01 \text{ Hz.})] = .6 \text{ breaths per minute}$

to

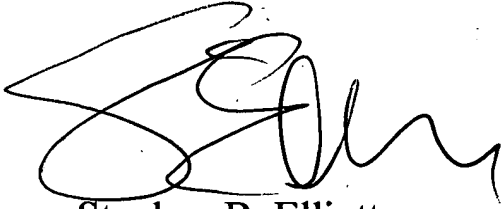
- $[60 \text{ seconds}/(1/.14 \text{ Hz.})] = 8.4 \text{ breaths per minute}$

These breathing frequencies are far below the average adult breathing frequency while at rest, i.e., 15 breaths per minute, and are clearly not those of exercise.

In summary, it is very clear that both the intent and the designs of Vaschillo and Elliott patents are fundamentally different.

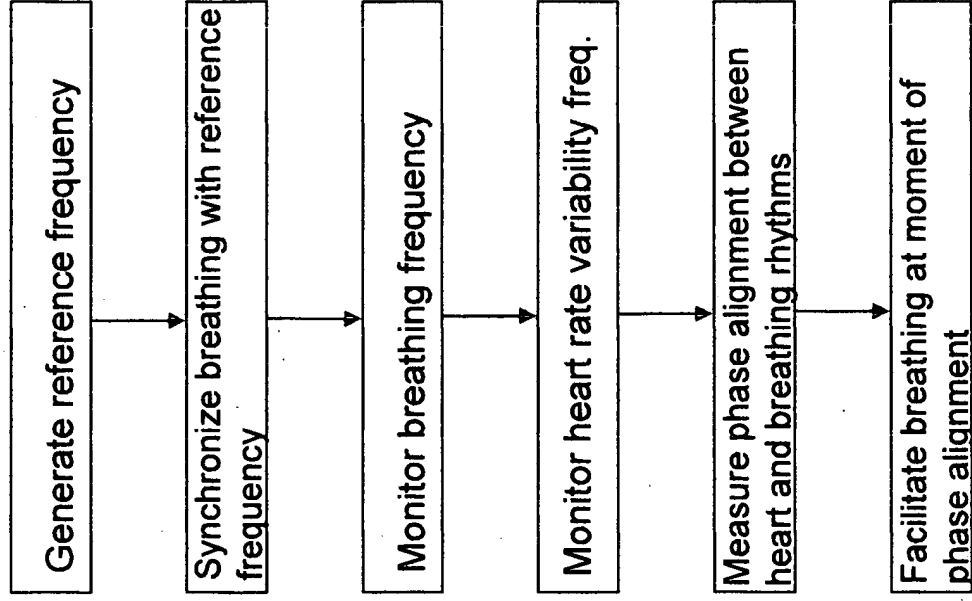
This completes my response.

Thanks very much for your consideration of the matter,

A handwritten signature in black ink, appearing to read 'S. Elliott', with a large, stylized initial 'S' and a trailing flourish.

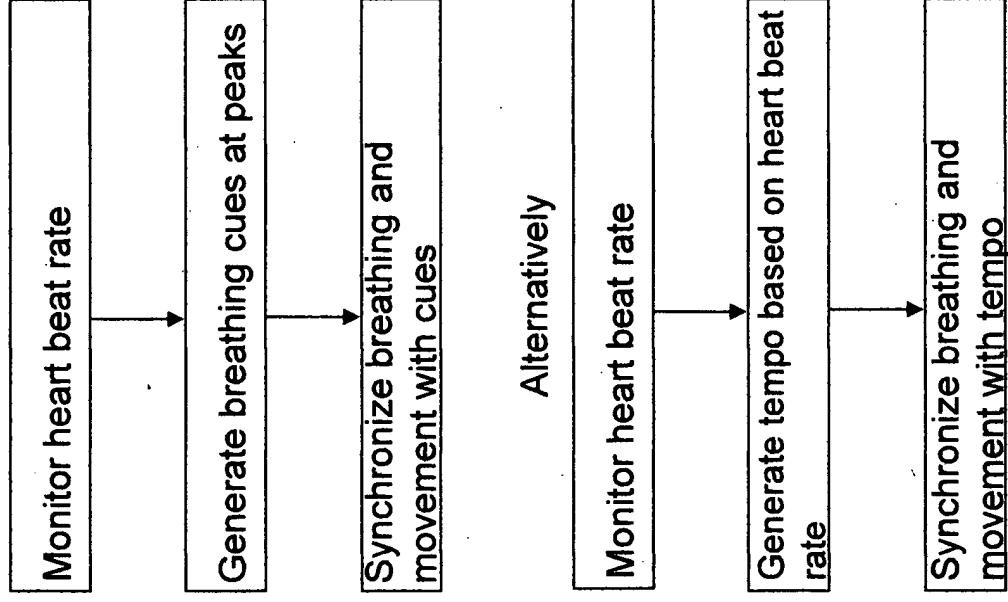
Stephen B. Elliott
Inventor

Vaschillo, et al.
5,997,482



Premise: Identify frequency of resonance and promote breathing at that frequency.

Elliott, 10/829079



Premise: Synchronize breathing and motion with heart rate variability cycle.